

REMARKS

I. Introduction

Claims 1 and 3 to 17 are pending in the present application. In view of the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

II. Rejection of Claims 1 and 3 to 17 Under 35 U.S.C. § 103(a)

Claims 1 and 3 to 17 were finally rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,709,394 ("Martin et al.") in view of U.S. Patent No. 5,480,188 ("Heyring"). Applicant respectfully submits that claims 1 and 3 to 17 are allowable for at least the following reasons.

Claim 1 relates to a hydropneumatic, level-regulated axle suspension for front and rear axles on vehicles. Claim 1 recites that the suspension includes two double-acting hydraulic suspension cylinders, whose cylinder spaces are each connected to a first pressure accumulator and whose annuli on a piston side are connected to a second pressure accumulator. Claim 1 further recites that the axle suspension for the front axle and the rear axle is designed as a reversible double-function axle suspension, so that each axle is switchable as an oscillating axle (in a cylinder transverse combination) or as a stabilizing axle (in a cross combination).

Martin et al. purportedly relate to a suspension means for a utility vehicle. Martin et al. state that the vehicle is supported at its front and rear ends by double-acting hydraulic cylinders. See Abstract. During downhill travel the front cylinders are stated to be blocked for fixing the front axle to the frame and the rear cylinders are stated to be hydraulically interconnected to allow the rear axle to oscillate to the frame. See Abstract. A control system for the hydraulic actuator means is stated to include hydraulic control means 26, which are stated to be linked to the double-acting hydraulic cylinders 17, 18, 23, 24 for extension and retraction thereof. See col. 3, line 66 to col. 4, line 2. Head end chambers of the left and right front cylinders 17, 18 are stated to be interconnected by an upper oscillation line 28. See col. 4, lines 3 to 5. A lower oscillation line is stated to be constituted by two hydraulic line portions 29, 79, which are stated to be linked to two ports of an oscillation control valve 85, stated to be a solenoid operated control valve with four ports and two positions and having a rest position shown in FIG. 3, wherein these line portions 29, 79 are stated to be

interconnected. See col. 4, lines 5 to 10. The cylinders 17, 18 and the lines 28, 29, 79 are stated to constitute an oscillation structure 27 for the front wheels 3. See col. 4, lines 10 to 12. The weight of the front end of the main frame 2 is stated to be supported by the oil enclosed in the head end chambers of the front cylinders 17, 18 and the upper oscillation line 28. See col. 4, lines 12 to 15. When external action on the rod of the left front cylinder 17 makes the same extend or retract, oil is stated to freely circulate through the oscillation lines 28, 29, 79 between the front cylinders 17, 18, such that the right front cylinder 18 is retracted or extended in the opposite sense. See col. 4, lines 15 to 19. External action on the right front cylinder 18 is stated to have an analogous effect on the left front cylinder 17. See col. 4, lines 20 to 21. When left and right control valves 38, 39 are in their rest positions, the ports thereof are stated to be closed. See col. 4, lines 59 to 60. Martin et al. state that when the oscillation control valve 85 is equally in its rest position, the oil in the left and right control lines 34, 35 cannot escape, such that the pistons of the rear cylinders 23, 24 are blocked by the oil trapped in their head end chambers. See col. 4, lines 60 to 64. Any upward or downward movement of the rear wheels 4 relative to the frame 2 is stated to be impeded, as if they were mounted onto a fixed rear axle 55. See col. 4, lines 64 to 67. Martin et al. further state that, as shown in FIG. 5, oscillation control valve 85 may be actuated to disconnect the lower oscillation line portions 29, 79 and to interconnect the left and right control lines 34, 35. See col. 5, lines 25 to 28. When the left and right control valves 38 and 39 are kept in their rest positions, the pistons of the front cylinders 17, 18 are stated to be immobilized by the oil trapped in their rod end chambers and the corresponding line portions 29, 79. See col. 5, lines 28 to 31. Hence, Martin et al. state that the front wheels 3 and their virtual axle 56 are kept in a fixed position to the main frame 2. See col. 5, lines 31 to 33.

Applicant submits that the above described "immobilized" state where axle 56 is kept in a fixed position relative to the main frame 2 cannot be considered a stabilizing axle in a cross combination, as recited in claim 1. When axle 56 is in a fixed position the pistons of the front cylinders 17, 18 are stated by Martin et al. to be immobilized by the oil trapped in their rod end chambers and the corresponding line portions 29, 79. See col. 5, lines 28 to 31. Thus, in this "immobilized" state there can be no cross flow between a cylinder space in a cylinder on one end of an axle and an annulus of a cylinder on an opposite end of the same axle, i.e., axle 56 is not in cross

combination, as recited in claim 1. The stabilizing axle in a cross combination is shown in Figure 2 of the present application. See also the Specification, for example, at p. 6, line 6 to p. 7, line 1.

Nor does Heyring cure the deficiencies of Martin et al. Heyring purportedly relates to a vehicle having a load support body, a pair of front ground engaging wheels and a pair of rear ground engaging wheels connected to the body to support the body. Abstract. A double acting fluid ram is stated to have a piston and to be interconnected between each wheel and the body. See Abstract and col. 4, lines 61 to 62. Each ram is stated to include a first and second fluid filled chamber on opposite sides of the ram piston, with the first and second chambers stated to vary in volume in response to vertical movement between the respective wheel and the body. See Abstract and col. 4, lines 65 to 67. First conduits are stated to provide fluid communication between the first chambers of the front and rear rams on the same side of the vehicle and second fluid conduits are stated to provide communication between the second chambers of the front and rear rams on the same side of the vehicle. See Abstract and col. 5, lines 7 to 11. A first further fluid communicating conduit is stated to interconnect the first fluid conduit on each side of the vehicle to the respective second fluid conduit on the opposite side of the vehicle, to thereby provide two fluid circuits, each including one of the first conduits, one of the second conduits, and one of the first further conduits interconnecting the first and second conduits. See Abstract and col. 5, lines 11 to 17. Each circuit is stated to be adapted to resiliently vary the fluid capacity of the circuit by an accumulator to accommodate fluid displaced from rams in that circuit with a resultant pressure rise in the circuit. See Abstract and col. 4, lines 32 to 39. Nowhere, however, does the combination of Martin et al. and Heyring disclose, or even suggest, an axle suspension for the front axle and the rear axle that is designed as a reversible double-function axle suspension, so that each axle is switchable as an oscillating axle (in a cylinder transverse combination) or as a stabilizing axle (in a cross combination), as recited in claim 1.

The Final Office Action alleges that “any axle could be a ‘stabilizing axle in cross combination’ assuming that the axle provides support across the vehicle.” Final Office Action at p. 6. Applicant respectfully disagrees. Firstly, even if a “stabilizing axle in cross combination” is defined simply as an axle which provides support across the vehicle, Applicant respectfully submits that nowhere does the Final

Office Action establish that the combination of Martin et al. and Heyring disclose, or even suggest, "an axle which provides support across the vehicle." Second, Applicant respectfully submits that a "stabilizing axle in cross combination" is not simply an axle, as alleged by the Final Office Action. A stabilizing axle is one which provides for a rigid suspension and good rolling stability. See p. 1, last par and p. 2, lines 16 to 25. A stabilizing axle *in cross combination*, as made clear by the Specification, is an axle which achieves a rigid quality providing for good rolling stability by allowing for cross flow between a cylinder space in a cylinder on one end of an axle and an annulus of a cylinder on an opposite end of the same axle. The stabilizing axle in a cross combination is shown in Figure 2 of the present application. See also the Specification, for example, at p. 6, line 6 to p. 7, line 1. Thus, use of the language "stabilizing axle in cross combination" in a manner which contradicts and is inconsistent with the use of this language in the context of the present application does not provide any basis for the present rejection.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). As indicated above, nowhere does the combination of Martin et al. and Heyring disclose, or even suggest, an axle suspension for the front axle and the rear axle that is designed as a reversible double-function axle suspension, so that each axle is switchable as an oscillating axle (in a cylinder transverse combination) or as a stabilizing axle (in a cross combination), as recited in claim 1.

It is respectfully submitted that the cases of *In re Fine*, *supra*, and *In re Jones*, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Final Office

Action's generalized assertions that it would have been obvious to modify or combine the reference do not properly support a § 103 rejection. It is respectfully submitted that those cases make plain that the Final Office Action reflects a subjective "obvious to try" standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the reference relied upon. In particular, the Court in the case of *In re Fine* stated that:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done. . . .

Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of *In re Jones* stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [invention].

In re Jones, 21 U.S.P.Q.2d at 1943, 1944 (citations omitted; italics in original).

That is exactly the case here since it is believed and respectfully submitted that the present Final Office Action offers no evidence whatsoever, but only conclusory hindsight, reconstruction and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding. Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to modify or combine references to provide the claimed subject

matter of the claims to address the problems met thereby. Accordingly, the Office must provide proper evidence of a motivation for modifying or combining the references to provide the claimed subject matter.

More recently, the Federal Circuit in the case of *In re Kotzab* has made plain that even if a claim concerns a “technologically simple concept” -- which is not the case here -- there still must be some finding as to the “specific understanding or principle within the knowledge of a skilled artisan” that would motivate a person having no knowledge of the claimed subject matter to “make the combination in the manner claimed,” stating that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000) (emphasis added). Again, it is believed that there have been no such findings.

The Final Office Action alleges that “it would have been obvious to one skilled in the art at the time the invention was made to modify the suspension of Martin et al. such that it comprised accumulators and hydraulic shock absorbing elements as claimed in view of the teachings of Heyring so as to provide resilience in the suspension and resist shock loading in the event that the axles are thrust down (Heyring: column 5, lines 32-36, 42-47; column 6, lines 1-4).” Final Office Action p. 4. The Examiner references column 5, lines 32-36, which states as follows:

The circuits 10 and 10a connected to the upper chambers of the four double acting rams, each has two accumulators 25 and 26 and 21 and 22 in communication therewith, and are primarily responsible for providing resilience in the suspension as do springs in prior art sprung suspensions. If the fluid used in the rams and connecting conduits is a

compressible gas, accumulators are not required as the gas provides the required level of compressibility or resilience.

The Examiner further references column 6, lines 1-4, which states as follows:

The accumulators may be provided with damping valves in the mouths thereof to perform the same function as so called shock absorbers in other vehicles' suspension systems.

Applicant respectfully submits that these statements merely represent that the suspension circuits, including rams and accumulators, provide resilience in the suspension similar to prior art sprung suspensions. These statements do not focus on the specific arrangement and interconnection of the rams but rather on the overall use of rams and an accumulator or rams and compressible gas (see col. 6, lines 36 to 39) as opposed to a sprung suspension. Therefore, these statements in no way provide a suggestion or motivation to combine any specific teaching of Heyring with Martin et al. In fact, Applicant respectfully submits that combining the cross ram connection of Heyring (suspension line 35, for example) with the suspension system of Martin et al. would render the suspension system of Martin et al. inoperable. Martin et al. specifically state that when axle 56 is in a fixed position the pistons of the front cylinders 17, 18 are immobilized by the oil trapped in their rod end chambers and the corresponding line portions 29, 79. See col. 5, lines 28 to 31. Thus, in this "immobilized" state there can be no cross flow between a cylinder space in a cylinder on one end of an axle and an annulus of a cylinder on an opposite end of the same axle. In contrast, as stated above, the Heyring circuits 10 and 10a are stated to interconnect the first fluid conduit on each side of the vehicle to the respective second fluid conduit on the opposite side of the vehicle, to thereby provide two fluid circuits, each including one of the first conduits, one of the second conduits, and one of the first further conduits interconnecting the first and second conduits. See Abstract and col. 5, lines 11 to 17. If the free flowing circuits 10 or 10a of Heyring are incorporated into Martin et al. oil could not be trapped in the rod end chambers so as to create a fixed axle.

Accordingly, there is no evidence that the references relied upon, whether taken alone, combined or modified, would provide the features and benefits of claim 1 herein. It is therefore respectfully submitted that claim 1 is allowable for these reasons.

Therefore, withdrawal of the 35 U.S.C. § 103(a) rejection and allowance of claim 1 is respectfully requested.

Since the combination of Martin et al. and Heyring does not disclose, or even suggest, all of the limitations of claim 1 as more fully set forth above, it is respectfully submitted that the combination of Martin et al. and Heyring does not render obvious claims 3 to 17, which ultimately depend from claim 1 and therefore include all of the limitations of claim 1. It is respectfully submitted that claims 3 to 17 are allowable for at least the same reasons that claim 1 is allowable. In re Fine, supra (any dependent claim that depends from a non-obvious independent claim is non-obvious). Therefore withdrawal of the 35 U.S.C. § 103(a) rejection and allowance of claims 3 to 17 is respectfully requested.

III. Conclusion

Applicant respectfully submits that all of the pending claims of the present application are now in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

Respectfully submitted,

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